ATTACHMENT H

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

Draft Socioeconomic Assessment for Proposed Rule 1420.1--Emissions Standard for Lead from Large Lead-Acid Battery Recycling Facilities

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EXECUTIVE SUMMARY

A socioeconomic analysis was conducted to assess the impacts of Proposed Rule 1420.1– *Emissions Standard for Lead from Large Lead-Acid Battery Recycling Facilities*. A summary of the analysis and findings is presented below.

Elements of Proposed Rule	Proposed Rule (PR) 1420.1–*Emissions Standard for Lead from Large Lead-Acid Battery Recycling Facilities*–reduces exposure to and emissions of lead from large lead-acid battery recycling facilities. This rule would apply to any owner or operator of a lead-acid battery recycling facility that processes more than 50,000 tons of lead a year. An affected facility is required to control emissions such that ambient concentrations of lead do not exceed a 30-day average of 0.15 μg/m³. The proposed rule will require that point and fugitive lead emissions are controlled.
Affected Facilities and Industries	Proposed Rule 1420.1 affects two facilities that process greater than 50,000 tons of lead annually. These two facilities belong to the industry of secondary lead smelting, refining, and alloying of nonferrous metal.
Assumptions of Analysis	Currently, Exide Technologies has entered into a settlement agreement with the South Coast Air Quality Management District (AQMD) that includes many of the requirements in the proposed rule. Because these similar requirements are already independently required, they are excluded from the cost analysis. Quemetco is meeting many of the PR 1420.1 requirements through compliance with Rule 1420 and AB2588. In addition, both facilities are subject to the National Emissions Standards for Hazardous Air Pollutants (NESHAPS) from Secondary Lead Smelting, which has some overlapping testing requirements in Proposed Rule 1420.1. The analysis focuses solely on the cost impact of the additional rule requirements for the two facilities. Information on costs were obtained from the two affected facilities, equipment vendors, and published sources.
Costs of Proposed Rule	The expected additional cost from the proposed rule is $0.32 million annually. The total cost is slightly higher in 2011 ($0.41 million) because of the public notification requirement (setup of one-time signs), hazardous waste disposal from construction of a secondary lead control device, potential compliance plan development, and the AQMD compliance plan review.

Employment and other Socioeconomic Impacts	PR 1420.1 is expected to result in an annual average of 11 jobs forgone in the four-county area from 2011 to 2025. This represents less than 0.0002 percent of the total employment in the four-county region and is within the noise of the model. The sector of primary metal manufacturing, where the two affected facilities belong, would have no jobs forgone, on average, between 2011 and 2025. The average annual jobs forgone in each of the other sectors are no more than one job between 2011 and 2025. Proposed Rule 1420.1 will have few impacts on the relative cost of production and delivered prices.

INTRODUCTION

Proposed Rule (PR) 1420.1–*Emissions Standard for Lead from Large Lead-Acid Battery Recycling Facilities*–reduces exposure to and emissions of lead from large lead-acid battery recycling facilities to protect public health and help attain the national ambient air quality standard for lead. This rule would apply to any owner or operator of a lead-acid battery recycling facility that processes more than 50,000 tons of lead a year. PR 1420.1 requires that affected lead acid battery recycling (secondary lead smelting) facilities install and maintain emissions control equipment, conduct ambient air monitoring, and perform regular housekeeping activities to control fugitive lead dust. An affected facility is required to control emissions such that ambient concentrations of lead do not exceed a 30-day average of 0.15 μg/m³ at or beyond the property line of the facility.

LEGISLATIVE MANDATES

The socioeconomic assessments at the AQMD have evolved over time to reflect the benefits and costs of regulations. The legal mandates directly related to the assessment of the proposed amendments include the AQMD Governing Board resolutions and various sections of the California Health & Safety Code (H&SC).

AQMD Governing Board Resolutions

On March 17, 1989 the AQMD Governing Board adopted a resolution that calls for preparing an economic analysis of each proposed rule for the following elements:

- Affected Industries
- Range of Control Costs
- Cost Effectiveness
- Public Health Benefits

On October 14, 1994, the Board passed a resolution which directed staff to address whether the rules or amendments brought to the Board for adoption are in the order of cost effectiveness as defined in the AQMP. The intent was to bring forth those rules that are cost effective first.

Health & Safety Code Requirements

The state legislature adopted legislation that reinforces and expands the Governing Board resolutions for socioeconomic assessments. H&SC Sections 40440.8(a) and (b), which became effective on January 1, 1991, require that a socioeconomic analysis be prepared for any proposed rule or rule amendment that "will significantly affect air quality or emissions limitations." Specifically, the scope of the analysis should include:

- Type of Affected Industries
- Impact on Employment and the Economy of the District
- Range of Probable Costs, Including Those to Industries
- Emission Reduction Potential

- Necessity of Adopting, Amending or Repealing the Rule in Order to Attain State and Federal Ambient Air Quality Standards
- Availability and Cost Effectiveness of Alternatives to the Rule

For the emission reduction potential necessity of rule adoption and cost effectiveness of alternatives to the rule, please refer to the Staff Report for PR 1420.1, which is incorporated by reference. Additionally, the AQMD is required to actively consider the socioeconomic impacts of regulations and make a good faith effort to minimize adverse socioeconomic impacts. H&SC Section 40728.5, which became effective on January 1, 1992, requires the AQMD to:

- Examine the type of industries affected, including small businesses; and
- Consider Socioeconomic Impacts in Rule Adoption

H&SC Section 40920.6, which became effective on January 1, 1996, requires that incremental cost effectiveness be performed for a proposed rule or amendment relating to ozone, carbon monoxide (CO), oxides of sulfur (SOx), oxides of nitrogen (NOx), and their precursors. Incremental cost effectiveness is defined as the difference in costs divided by the difference in emission reductions between one level of control and the next more stringent control. PR 1420.1 regulates lead and is thus not subject to H&SC Section 40920.6.

AFFECTED INDUSTRIES

AQMD staff, using Annual Emissions Reporting program data for years 2004 through 2007, permitting data, and compliance data, identified two lead-acid battery recycling facilities that process more than 50,000 tons of lead-acid batteries per year. Exide Technologies is located in the City of Vernon. Quemetco is located in the City of Industry. These two facilities belong to the industry of secondary lead smelting, refining, and alloying of nonferrous metal [North American Industrial Classification System (NAICS) 331492] where spent lead-acid batteries, mostly automotive, and other lead-bearing materials are received from various sources and processed to recover lead, plastics, and acids. The process mainly involves the sorting, melting, and refining of lead-acid batteries, which ultimately produces lead ingots that are then sold to other entities.

Small Businesses

The AQMD defines a "small business" in Rule 102 as one which employs 10 or fewer persons and which earns less than $500,000 in gross annual receipts. In addition to the AQMD's definition of a small business, the federal Small Business Administration (SBA), the federal Clean Air Act Amendments (CAAA) of 1990, and the California Department of Health Services (DHS) also provide definitions of a small business.

The SBA's definition of a small business uses the criteria of gross annual receipts (ranging from $0.5 million to $25 million), number of employees (ranging from 100 to 1,500), megawatt hours generated (4 million), or assets ($150 million), depending on industry type. The SBA definitions of small businesses vary by 6-digit NAICS code. The size standard for a small business in the industry of secondary lead smelting, refining, and alloying of nonferrous metal, NAICS 331942, where the two affected facilities belong is 750 employees.

The CAAA classifies a facility as a "small business stationary source" if it: (1) employs 100 or fewer employees, (2) does not emit more than 10 tons per year of either VOC or NOx, and (3) is a small business as defined by SBA.

Exide Technologies has operations in 80 countries with fiscal year 2009 net sales of approximately $3.3 billion.[1] Quemetco, based in Indianapolis, Indiana, has operations in a few states. It has over 150 employees at the location in the City of Industry, CA. Neither facility is a small business based on the Rule 102 criteria. Corporate employment information is not available for either of the two facilities. Therefore, it is unknown whether they are small businesses under the U.S. SBA definition. Neither facility is a small business under the CAAA definition because both emit more than 10 tons of VOC or NOx annually.

COMPLIANCE COST IMPACT

The proposed rule would go into effect on various dates. Housekeeping requirements would go into effect 30 days after rule adoption. Total enclosure and lead control device requirements would go into effect on July 1, 2011, or 180 days after permits are approved by the AQMD, whichever is earlier. Until January 1, 2012, the owner or operator must meet the current lead ambient air quality standard of 1.5 µg/m³. On or after January 1, 2012, the owner or operator must meet the new lead ambient air quality standard of 0.15 µg/m³. The ambient air lead concentration requirement would go into effect on January 1, 2012. Therefore, it is expected that many of the equipment purchases, planning, and permitting activities will be completed in 2011. Beginning in 2012 and beyond, the major costs associated with this proposed rule will be operational expenses and equipment replacement.

Currently, Exide Technologies has entered into a settlement agreement with the AQMD that includes many of the requirements in the proposed rule. These similar requirements are excluded from the cost analysis. Quemetco is meeting many of the PR 1420.1 requirements through compliance with Rule 1420 and AB2588. ~~One alternative proposal that has been suggested is that the proposed rule require a total lead point source emission rate of 0.003 lbs/hr. In a letter from Quemetco, Inc. to the SCAQMD staff on September 22, 2010, the estimated cost to upgrade their facility to install state-of-the-art emission controls to reduce lead emissions from its facility to these low levels was approximately $18 million. Since Exide's throughput limits are comparable to Quemetco and the level of control to achieve 0.003 lbs/hr would be similar, the SCAQMD staff estimates the additional cost of control would be between $15 and $20 million.~~ Specifically, costs associated with the total enclosure of the areas used for processing and storage of lead-containing materials as well as ambient air quality monitoring are not included in the analysis. Total enclosures have been, or are currently being, constructed because of legal mandates prior to this rulemaking. The analysis focuses solely on the cost impact of the additional rule requirements for the two facilities.

The affected facilities are required to install digital differential pressure monitors to monitor the air pressure for the venting of the total enclosures. The purchase and installation cost for one facility is $2,000 per monitor and $30,000 for another. The cost differential was due to the lower

[1] Home Community. Exide Technologies. 2009-2010. http://www.exide.com/. Accessed 5/21/2010.

cost representing an upgrade of existing monitors to comply with the proposed rule and the higher cost representing the purchase and installation of necessary infrastructure to operate new monitors to comply with the proposed rule. A total of 11 monitors are assumed to be upgraded or purchased. It was assumed that five monitors will be upgraded at a cost of $2,000 per monitor, and six new monitors will be purchased and installed at a cost of $30,000 per monitor. The total annualized cost to the two facilities is $68,470 at the four percent interest rate and an assumed lifespan of three years, based on each individual facility's estimates of monitor prices.

The proposed rule would require the installation of a secondary lead control device, such as a HEPA filter, to reduce lead emissions from the exhaust of the primary lead control device used for a dryer. The cost of the device, including installation, is $200,000. The one-time cost for hazardous waste disposal resulting from construction of a HEPA filter will be $66,000. A filter to the device is to be replaced annually at a cost of $2,400. Information on the HEPA filter was obtained from an air pollution control vendor. The cost for the waste disposal was obtained from an affected facility. It is estimated that only one HEPA filter would be installed as a result of the proposed rule. The total annualized cost of the one-time expenditure at four percent interest rate and 10-year equipment life, and the annual filter replacement cost, is estimated to be $35,100.

The proposed rule requires more stringent housekeeping, recordkeeping, and maintenance practices to minimize fugitive lead dust emissions. This requirement will include the purchase of one mobile sweeper, at a cost of $100,000, according to a vendor. The mobile sweeper, with a 10 year lifespan at a four percent interest rate, is expected to have an annualized cost of $12,300. Staffing for sweeping, washing, annual inspections, secondary lead control HEPA filter maintenance, and recordkeeping is expected to cost approximately $130,000 annually for both facilities. The public notification requirement is estimated to add a one-time cost of $300 for creation of a sign at each facility. Costs on staffing were obtained from one of the affected facilities. For the other facility, information on prevailing wages for metal-refining furnace operators and tenders and office assistants were obtained from the California Employment Development Department, and was combined with industry estimated hours to determine the annual labor cost. The cost estimate for the sign was obtained from a vendor.

It is assumed that roof washing will be contracted out at a total cost of approximately $12,000 annually, based on data from an affected facility. Additional water usage for sweeping and roof washing is expected to cost $3,000 annually, given the current water rate and usage data. Water usage data was obtained from an affected facility and was combined with the water rate from a water utility company to provide estimated water usage costs.

Although it is not known if the facilities will trigger the requirement to submit a compliance plan, it was assumed in the analysis that both facilities would complete a compliance plan. For the two facilities combined, there is a one-time cost of $20,000 for the compliance plan development, and up to $85,000 in combined costs for the AQMD to review compliance plans. Facility compliance plan development costs were obtained from the two facilities and their consultants.

Currently under the NESHAPS, affected facilities are required to conduct source testing annually, or every other year if stack emissions are below 1 mg/DSCM of lead. One facility is currently below the NESHAPS threshold and therefore PR1420.1 will not require the facility to conduct additional source testing. The other facility's stack emissions from three of the nine

stacks are below the NESHAPS standard, so no additional source testing is required for these three stacks. Under PR 1420.1, six of the remaining stacks at that facility will be required to conduct source testing of emissions stacks annually at a cost of $45,000. Costs for source testing were obtained directly from the affected facility.

There is an additional cost for batteries used as backup power for air monitoring equipment that are expected to cost $4,000 per unit for four units. With a three year expected lifespan, at a four percent interest rate, the batteries are estimated to add $5,760 to the annualized cost. The cost and lifespan information was obtained from a vendor.

Based on the assumptions above, the annual total cost to comply with the proposed rule is estimated to be $0.32 million, on average, from 2011 to 2025. The total cost is slightly higher in 2011 ($0.41 million) because of the public notification requirement, hazardous waste disposal from construction of a secondary lead control device, compliance plan development, and the subsequent AQMD compliance plan review.

TOTAL IMPACTS

The REMI model (PI+ v1.1.6) is used to assess the total socioeconomic impacts of a policy change (i.e., the proposed rule). The model links the economic activities in the counties of Los Angeles, Orange, Riverside, and San Bernardino. The REMI model for each county is comprised of a five block structure that includes (1) output and demand, (2) labor and capital, (3) population and labor force, (4) wages, prices and costs, and (5) market shares. These five blocks are interrelated. Within each county, producers are made up of 66 private non-farm industries, three government sectors, and a farm sector. Trade flows are captured between sectors as well as across the four counties and the rest of U.S. Market shares of industries are dependent upon their product prices, access to production inputs, and local infrastructure. The demographic/migration component has 160 ages/gender/race/ethnicity cohorts and captures population changes in births, deaths, and migration.

The assessment herein is performed relative to a baseline where PR 1420.1 would not be implemented. Direct effects of the policy change (proposed rule) have to be estimated and used as inputs to the REMI model in order for the model to assess secondary and induced impacts for all the actors in the four-county economy on an annual basis and across a user-defined horizon (2011 to 2025). Direct effects of the proposed rule include additional costs to the affected entities and additional sales, by local vendors, of equipment, devices, or services that would meet the proposed requirements.

The utility sector (NAICS 22) will benefit from the sales of additional water. Purchases of digital differential pressure monitors, a secondary lead control device, and the mobile sweeper will increase the sales of the wholesale trade sector (NAICS 423). Purchases of batteries will increase sales in the electrical equipment, appliance, and component manufacturing sector (NAICS 335). The administrative support and waste management and remediation services sector (NAICS 56) will benefit from the utilization of roof cleaning contractors and hazardous waste disposal. The public notification requirement (setup of one-time signs) will increase demand for the product of the printing and related support sector (NAICS 323). The additional demand for services of compliance plan development and source testing will result in an increase

in sales of the professional and technical services sector (NAICS 541). Additional AQMD staff time will be needed to review compliance plans, but the proposed rule is expected to reduce compliance issues with the affected facilities. The additional staffing for the housekeeping requirements will slightly lower labor productivity in the sector of primary metal manufacturing (NAICS 331) where the two facilities belong. All the expenditures that are incurred by the two facilities will increase their cost of doing business.

PR 1420.1 is expected to result in an annual average of 11 jobs forgone in the four-county area from 2011 to 2025. This represents less than 0.0002 percent of the total employment in the four-county region and is within the noise of the model. The sector of primary metal manufacturing, where the two affected facilities belong, would have no jobs forgone, on average, between 2011 and 2025. The average annual jobs forgone in each of the other sectors are no more than one job between 2011 and 2025.

Proposed Rule 1420.1 will have few impacts on the relative cost of production and delivered prices.

RULE ADOPTION RELATIVE TO THE COST EFFECTIVENESS SCHEDULE

On October 14, 1994, the Governing Board adopted a resolution that requires staff to address whether rules being proposed for adoption are considered in the order of cost-effectiveness. The 2007 Air Quality Management Plan (AQMP) ranked, in the order of cost-effectiveness, all of the control measures for which costs were quantified. It is generally recommended that the most cost-effective actions be taken first. PR 1420.1 is not a control measure in the 2007 Air Quality Management Plan (AQMP) and thus, was not ranked by cost-effectiveness relative to other AQMP control measures in the 2007 AQMP.

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